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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,699	03/01/2002	Kou-Joan Cheng	08919-074001	4883
69713 7590 09/11/2007 OCCHIUTI ROHLICEK & TSAO, LLP 10 FAWCETT STREET CAMBRIDGE, MA 02138				
			EXAMINER NAFF, DAVID M	
			ART UNIT 1657	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/087,699

Applicant(s)

CHENG ET AL.

Examiner

David M. Naff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-26 is/are pending in the application.
- 4a) Of the above claim(s) 11-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible
5 for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/07 has been entered.

A response of 6/25/07 presented arguments and did not amend the
10 claims.

Claims in the application are 1, 3-6 and 8-26.

Claims 11-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without
15 traverse in the reply filed on 12/15/04.

Claims examined on the merits are 1, 3-6 and 8-10.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

20 Claims 1, 3-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole (4,320,151) in view of Boinot et al (2,529,131) and Bass (3,983,255) and De Sa et al (4,337,123), and if necessary in further view of Heikkila et al (5,730,877) for reasons in the previous office action of 10/24/06, and for reasons herein.

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The claims are drawn to a composition containing a thermolabile protein, which can be an enzyme, admixed with a liquor waste.

Cole discloses increasing thermal stability of amylase by adding the enzyme to a concentrated sugar solution (col 6, lines 8-15).

5 Solutions of 40-60% sucrose, dextrose, fructose, invert syrup and corn syrup protected amylase at 170° F and 180° F (col 8, lines 45-68 and Table 9, col 9). Cole further discloses that it had been previously found in that prior art that 20-40% sucrose increased enzyme activity at 63° C (about 145° F) (col 4, lines 59-62).

10 Boinot et al disclose that vinasse (residue from distilling to produce alcohol that is a waste) (col 1, line 28) contains unfermentable sugar (col 1, lines 9-33), and converting the unfermentable sugar to fermentable sugar (col 3, lines 48-61, and col 4, lines 33-38).

15 Bass discloses concentrating vinasse (molasses fermentation residues after distilling that is a waste) (col 1, lines 25-30) to 75-80% solids and drying the concentrate (col 3, line 44 and lines 55-58) for use in animal food or fertilizer.

De Sa et al disclose that vinasse is a waste, which disposing of
20 is a problem (col 1, line 20 to col 2, line 14).

Heikkila et al disclose that vinasse can be fractioned to obtain fractions rich in sucrose (col 1, lines 23-25).

It would have been obvious to use vinasse to supply the sugar in the sugar solution that amylase is added to stabilize the amylase
25 during heating as disclosed by Cole as suggested by Boinot et al and

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Bass, and if needed Heikkila et al, disclosing that vinasse contains sugar, and can be concentrated and dried, and as further suggested by De Sa et al disclosing that disposing of vinasse is a problem, and finding a use for vinasse will be of benefit. Vinasse is a liquor waste and mixing vinasse with the amylase of Cole will result in a composition as presently claimed. The waste liquors of claims 3-5 would have been suggested by De Sa et al disclosing fermentable plant materials including sorghum and hydrolyzed cellulosic materials that can be used in processes resulting in vinasse (col 2, lines 45-55).

Response to Arguments

The response urges that Cole discloses at least 20% sugar for protecting thermolabile protein, whereas vinasse disclosed by the secondary references contains less sugar. However, Boinot et al disclose converting unfermentable sugar of vinasse to fermentable sugar, and Heikkila et al disclose fractionating vinasse to obtain fractions rich in sucrose. After converting unfermentable sugar to fermentable sugar or obtaining a fraction rich in sucrose, it would have been obvious to concentrate the vinasse or the fraction sufficiently to obtain at least 20% sugar since Bass discloses concentrating vinasse.

The response argues the sucrose rich fraction of Heikkila et al is not a liquor waste. However, this is a matter of individual interpretation as to material that is a liquor waste. The term "liquor waste" is a broad term, and includes many different waste materials such as vinasse from a process of distillation. Since the

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sucrose rich fraction of Heikkila et al comes from vinasse, it would also be a liquor waste. Liquor waste does not have to result from two distillations of sorghum, and none of the present claims require the liquor waste to be obtained from two distillations of sorghum. De Sa et al disclose that fermentable plant materials including sorghum can be used in processes that produce vinasse (col 2, lines 45-55), and it would have been obvious to obtain vinasse from distillation of fermented sorghum. The conversion of unfermentable sugar to fermentable sugar as disclosed by Boinot et al would not result in a material that is not a liquor waste. Concentrating a vinasse to contain at least 20% sugar as desired by Cole is well within the ordinary skill of the art. It is clear from Boinot et al, as well as Heikkila et al that vinasse contains sugar. One would have been motivated to use vinasse containing sugar to provide the sugar solution used by Cole to provide a use for vinasse which a known waste product, which disposing of can be a problem as disclosed by De Sa et al.

Conclusion

Any inquiry concerning this communication or earlier

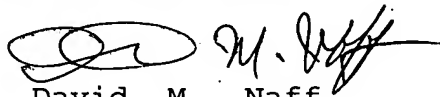
communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David M. Naff
Primary Examiner
Art Unit 1657

DMN

9/3/07